```
     (FILE 'HOME' ENTERED AT 18:07:44 ON 14 DEC 2002)

     FILE 'INSPEC' ENTERED AT 18:08:11 ON 14 DEC 2002
L1         27568 ALGAAS OR GAALAS
L2         28225 GROWTH (2A) RATE
L3        225327 ALUMINUM OR AL
L4          2500 L1 (P)L3
L5            83 L2 (P)L4
L6       1107167 SLOW##### OR LOW######
L7            29 L5 (P)L6
L8         33174 BUFFER
L9             0 L7 AND L8

     FILE 'CA' ENTERED AT 18:23:21 ON 14 DEC 2002
L10            0 L9
L11       186813 L8
L12           17 L7
L13       186813 BUFFER
L14       114486 GAAS
L15            0 L9 AND L14

     FILE 'INSPEC' ENTERED AT 18:25:56 ON 14 DEC 2002
L16            0 L9 AND GAAS
L17        33174 BUFFER
L18         2497 L17 (P)GAAS
L19        86503 U
L20           39 L1 (10A)L2
L21        33174 BUFFER
L22            0 L20 AND L21
L23            0 L22 AND L3
L24            0 1L1 AND L2 AND L3
L25           83 L1 AND L2 AND L3
L26           29 L25 AND L6

=>
```

L7 ANSWER 2 OF 29 INSPEC COPYRIGHT 2002 FIZ KARLSRUHE
AN 2000:6647298 INSPEC DN A2000-16-6855-066; B2000-08-0520F-133
TI Comparison of binary and ternary growth over trenches using MOVPE.
AU Hofmann, L.; Knauer, A.; Rechenberg, I.; Zeimer, U.; Weyers, M.
(Ferdinand-Braun-Inst. fur Hochstfrequenztech., Berlin, Germany)
SO Journal of Crystal Growth (June 2000) vol.213, no.3-4, p.229-34. 9 refs.
Doc. No.: S0022-0248(00)00384-5
Published by: Elsevier
Price: CCCC 0022-0248/2000/$20.00
CODEN: JCRGAE ISSN: 0022-0248
SICI: 0022-0248(200006)213:3/4L.229:CBTG;1-#
DT Journal
TC Experimental
CY Netherlands
LA English
AB The MOVPE growth of Al0.3Ga0.7As over trenches is compared to the growth of its binary components GaAs and AlAs. The growth rates for GaAs, AlAs and **AlGaAs** on planar (100), (311)A and (311)B substrates are independent of orientation and the **AlGaAs growth rate** and composition can be described by the sum of the two binaries. For growth over trenches with {311}-sidewalls the **growth rate** and the composition on the sidewalls are different compared to (100) due to the interplay of the adjacent facets. The AlAs **growth rate** is nearly the same on the sidewalls and the planar regions indicating that **Al** is incorporated without extensive surface diffusion. For growth temperatures above 660 degrees C the GaAs **growth rate** on the sidewalls is enhanced indicating strong Ga diffusion from (100) to the sidewalls. From these two binary growth rates the Al0.3Ga0.7As **growth rate** and composition is calculated and compared to the measured values. On the sidewalls the measured **AlGaAs growth rate** is **lower** and the **Al** content is higher than expected from the binary results.
CC A6855 Thin film growth, structure, and epitaxy; A8115H Chemical vapour deposition; B0520F Chemical vapour deposition; B2520D II-VI and III-V semiconductors
CT ALUMINIUM COMPOUNDS; GALLIUM ARSENIDE; III-V SEMICONDUCTORS; MOCVD; MOCVD COATINGS; SCANNING ELECTRON MICROSCOPY; SEMICONDUCTOR EPITAXIAL LAYERS; SEMICONDUCTOR GROWTH; VAPOUR PHASE EPITAXIAL GROWTH
ST binary growth; ternary growth; MOVPE; metal-organic vapour phase epitaxy; trench growth; semiconductor growth; {311}-sidewall trench; **growth rate**; composition profile; temperature dependence; III-V semiconductors; Ga diffusion; patterned growth; SEM; scanning electron microscopy; 660 C; Al0.3Ga0.7As
CHI Al0.3Ga0.7As ss, Al0.3 ss, Ga0.7 ss, Al ss, As ss, Ga ss
PHP temperature 9.33E+02 K
ET Al*As*Ga; Al sy 3; sy 3; As sy 3; Ga sy 3; Al0.3Ga0.7As; Al cp; cp; Ga cp; As cp; As*Ga; As sy 2; sy 2; Ga sy 2; GaAs; Al*As; Al sy 2; AlAs; AlGaAs; B; Al; C; Ga; V; As

L7 ANSWER 9 OF 29 INSPEC COPYRIGHT 2002 FIZ KARLSRUHE

AN 1996:5446737 INSPEC DN A9702-8115H-032; B9701-0510D-118

TI Metalorganic vapor deposition growth of **AlGaAs** on a ridged GaAs(100) substrate for a **low** threshold current laser.

AU Narui, H. (Res. Center, Sony Corp., Yokohama, Japan)

SO Journal of Crystal Growth (Oct. 1996) vol.167, no.3-4, p.452-7. 14 refs.
Doc. No.: S0022-0248(96)00272-2
Published by: Elsevier
Price: CCCC 0022-0248/96/$15.00
CODEN: JCRGAE ISSN: 0022-0248
SICI: 0022-0248(199610)167:3/4L.452:MVDG;1-T

DT Journal

TC Experimental

CY Netherlands

LA English

AB We have investigated the epitaxial growth of **AlGaAs** on a non-planar GaAs(100) substrate, which has ridged stripes aligned in the [011] direction. The morphology of the (100) plane depended on the **Al** content of the **AlGaAs** layers-a high **Al** content meant a rough surface. The roughness of the surface was independent of the V/III ratio, but depended on the **growth rate** of the epitaxial layers. The morphology of the (100) plane was improved using a **growth rate** of less than 0.16 nm/s.

CC A8115H Chemical vapour deposition; A6855 Thin film growth, structure, and epitaxy; A6865 Layer structures, intercalation compounds and superlattices: growth, structure and nonelectronic properties; A4255P Lasing action in semiconductors; B0510D Epitaxial growth; B2530B Semiconductor junctions; B4320J Semiconductor lasers; B0520F Vapour deposition; B2520D II-VI and III-V semiconductors

CT ALUMINIUM COMPOUNDS; GALLIUM ARSENIDE; III-V SEMICONDUCTORS; OPTICAL MICROSCOPY; ORGANOMETALLIC COMPOUNDS; SCANNING ELECTRON MICROSCOPY; SEMICONDUCTOR EPITAXIAL LAYERS; SEMICONDUCTOR GROWTH; SEMICONDUCTOR HETEROJUNCTIONS; SEMICONDUCTOR LASERS; SUBSTRATES; SURFACE STRUCTURE; SURFACE TOPOGRAPHY; SURFACE TREATMENT; VAPOUR DEPOSITED COATINGS; VAPOUR PHASE EPITAXIAL GROWTH

ST ridged GaAs(100) substrate; metalorganic vapor deposition growth; morphology; surface roughness; **growth rate**; SEM; **low threshold current lasers**; double heterostructure laser; **AlGaAs-GaAs**; GaAs

CHI AlGaAs-GaAs int, AlGaAs int, GaAs int, Al int, As int, Ga int, AlGaAs ss, Al ss, As ss, Ga ss, GaAs bin, As bin, Ga bin; GaAs sur, As sur, Ga sur, GaAs bin, As bin, Ga bin

ET Al*As*Ga; Al sy 3; sy 3; As sy 3; Ga sy 3; AlGaAs; Al cp; cp; Ga cp; As cp; As*Ga; As sy 2; sy 2; Ga sy 2; GaAs; Al; V; AlGaAs-GaAs; As; Ga

QD921.J56

p452-7

L7 ANSWER 21 OF 29 INSPEC COPYRIGHT 2002 IEE
AN 1989:3323393 INSPEC DN A89037522
TI Crystal growth of GaAs and **AlGaAs** by OMVPE using triethylarsenic as arsenic source.
AU Fujita, S.; Imaizumi, M.; Araki, S.; Takeda, Y.; Sasaki, A. (Dept. of Electr. Eng., Kyoto Univ., Japan)
SO Journal of Crystal Growth (Nov.-Dec. 1988) vol.93, no.1-4, p.1-6. 9 refs.
Price: CCCC 0022-0248/88/$03.50
CODEN: JCRGAE ISSN: 0022-0248
Conference: Fourth International Conference on Metalorganic Vapor Phase Epitaxy. Hakone, Japan, 16-20 May 1988
Sponsor(s): Japan Soc. Appl. Phys.; Japan Assoc. Crystal Growth
DT Conference Article; Journal
TC Experimental
CY Netherlands
LA English
AB Triethylarsenic (TEAs), which is much less toxic than arsine, was used as an arsenic source for organometallic vapor-phase epitaxy (OMVPE) of GaAs and **AlGaAs**. The **lower** growth rates of GaAs at higher growth temperatures were remarkably increased by a **low** pressure growth. **AlGaAs** with a mirror-like smooth surface was obtained for the first time over a wide range of growth temperatures 600-710 degrees C, V/III ratios 3-10, and **Al** compositions 0-0.5. Purity of TEAs was found to be an important key for good quality **AlGaAs** epilayers. The **growth rate** of **AlGaAs** became **lower** and the **Al** composition higher, as the growth temperature was increased. Room temperature, pulsed operation of double heterojunction laser diodes, which were fabricated with the grown layers of GaAs and **AlGaAs** doped with Si or Zn, was achieved at the first trial.
CC A8110B Growth from vapour; A7280E III-V and II-VI semiconductors; A6150C Physics of crystal growth; A6170T Doping and implantation of impurities
CT ALUMINIUM COMPOUNDS; CRYSTAL GROWTH FROM VAPOUR; GALLIUM ARSENIDE; III-V SEMICONDUCTORS; ORGANOMETALLIC COMPOUNDS; SEMICONDUCTOR DOPING; SILICON; VAPOUR PHASE EPITAXIAL GROWTH; ZINC
ST semiconductor doping; triethylarsenic; organometallic vapor-phase epitaxy; growth rates; epilayers; double heterojunction laser diodes; GaAs:Si; GaAs:Zn; **AlGaAs:Si**; **AlGaAs:Zn**
CHI GaAs:Si ss, As ss, Ga ss, Si ss, GaAs bin, As bin, Ga bin, Si el, Si dop; GaAs:Zn ss, As ss, Ga ss, Zn ss, GaAs bin, As bin, Ga bin, Zn el, Zn dop; AlGaAs:Si ss, AlGaAs ss, Al ss, As ss, Ga ss, Si ss, Si el, Si dop; AlGaAs:Zn ss, AlGaAs ss, Al ss, As ss, Ga ss, Zn ss, Zn el, Zn dop
ET As*Ga; As sy 2; sy 2; Ga sy 2; GaAs; Ga cp; cp; As cp; Al*As*Ga; Al sy 3; sy 3; As sy 3; Ga sy 3; AlGaAs; Al cp; C; Al; Si; Zn; V; As*Ga*Si; Si sy 3; GaAs:Si; Si doping; doped materials; As*Ga*Zn; Zn sy 3; GaAs:Zn; Zn doping; Al*As*Ga*Si; Al sy 4; sy 4; As sy 4; Ga sy 4; Si sy 4; AlGaAs:Si; Al*As*Ga*Zn; Zn sy 4; AlGaAs:Zn; As; Ga

```
=> d his

     (FILE 'HOME' ENTERED AT 18:07:44 ON 14 DEC 2002)

     FILE 'INSPEC' ENTERED AT 18:08:11 ON 14 DEC 2002
L1          27568 ALGAAS OR GAALAS
L2          28225 GROWTH (2A) RATE
L3         225327 ALUMINUM OR AL
L4           2500 L1 (P)L3
L5             83 L2 (P)L4
L6        1107167 SLOW##### OR LOW######
L7             29 L5 (P)L6
L8          33174 BUFFER
L9              0 L7 AND L8

=>
```

WEST Search History

DATE: Saturday, December 14, 2002

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L26	l25 and l9	8	L26
L25	L24 same l7	41	L25
L24	l22 same l23	180	L24
L23	(top or upper or second) near l6	341	L23
L22	(low$4 or bottom or first) near l6	323	L22
L21	low$4 or first or bottom near l6	7688719	L21
L20	l6 same l12	9	L20
L19	l6 and l14	10	L19
L18	L17 and l10	1	L18
L17	abnormal	166183	L17
L16	abnormal	166183	L16
L15	l6 same l14	5	L15
L14	l7 same l12	190	L14
L13	l7 and l12	1440	L13
L12	l9 near l11	1708	L12
L11	low$4 or slow$4	5754446	L11
L10	l8 same l9	31	L10
L9	growth adj rate	21817	L9
L8	l6 same l7	1997	L8
L7	al or aluminum	3686778	L7
L6	l4 or l5	6453	L6
L5	algas or gaalas	4900	L5
L4	l1 adj l2 adj l3	1746	L4
L3	as	25858193	L3
L2	ga?sub.$	9611	L2
L1	al?sub.$	74988	L1

END OF SEARCH HISTORY